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ABSTRACT

Do Mexico's schools provide geographic learning opportunities to students and does equal opportunity to learn exist? The site for this study was Baja California's school district of Ensenada. Geographic education in urban primary and secondary schools was examined. School administrators and select teachers from 40 schools were asked about time allocated, content covered, student resources available, teacher resources available, teacher methodologies employed, and learning activities. Using the Griffin-Ford model of Latin American city structure to provide a socioeconomic framework for the school system, the results of the study showed that spending for learning materials was greater at those schools in high socioeconomic zones, and that learning opportunities were not provided uniformly in all zones. Teacher qualifications, class size, and facility size were not related to socioeconomic status. (NL)

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GEOGRAPHIC EDUCATION IN MEXICAN SCHOOLS

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GEOGRAPHIC EDUCATION OPPORTUNITIES IN MEXICAN SCHOOLS

Do Mexico's schools provide equal or comparable geographic learning opportunities to students? Are some students enjoying greater advantage in this subject area than others? As in most educational jurisdictions, it is the intent of Mexican authorities and policy makers to provide equal opportunity to the nation's students.

The school district of Ensenada, in Mexico's state of Baja California, was chosen for a study of this question. The study's strategy has been to survey the provision of geographic education in the primary and secondary schools of the urbanized portion of this district, in respect to selected indicators of student learning opportunity, and then to assess the findings spatially. School administrators and selected teachers from 40 schools were surveyed regarding time allocated, content covered, student resources available, teacher resources available, library resources available, teacher methodologies employed and learning activities undertaken. Other relevant indicators of class size, school size, teacher qualifications and student interest were also considered.

The intent then has been to survey and spatially assess the indicators of geographic learning opportunity, in this district's urbanized primary and secondary schools. The following null hypothesis has been utilized to the study. The learning opportunities concerning geographic education are uniformly and equally available to the primary and secondary students of

urbanized Ensenada. To assist with the analysis focus a generalized model of Latin American city structure has been spatially imposed an the study area of the district. The Griffin - Ford (1980 p.406) model of Latin American city structure provides an adaptable socioeconomic framework through which to view the school system. Of interest will be the comparative testing of the stated null hypothesis in respect to the selected indicators on the relevant zones of the model. The study's implications concern the success of this district's urban schools, and indeed Mexico's success, in meeting the intention of providing equal learning opportunities to students of this important curricular subject.

THE BACKGROUND

In view of this paper's focus several questions are asked: 1) How important is education in general, to the Mexican people? 2) How important is the subject of geography? A brief look at Mexican education in the twentieth century is appropriate. Kneller (1973) notes that education before 1910 was a luxury reserved for the privileged. Though somewhat lacking in creativity, a ground swell of interest in expanding education, emerged in the Diaz era. Revolutionary leaders heralded the cry for land and schools.

"The Constitution of 1917 made sweeping promises and declarations concerning the educational rights of the people, and with the program of President Obregon, in 1921, the longings of generations seemed at last to be on their way toward fulfillment." (Kneller p. 222)

In 1921 the Ministry of Education was reconstructed and made responsible for the entire educational program of the nation (Chavels 1978). Nevertheless, the federal government reserves a number of powers for the states, for municipalities and for individual groups of people. This results in some lack of uniformity of program delivery. As a counterbalance the Ministry of Education's Secretariat of Public Education (Secretaria de Education Publica) known as 'SEP' (1) is the administrative department with supervisory powers for primary and lower secondary schools. Nursery schools are not officially part of the educational system but often receive advisory capacity support from the SEP. Higher levels of education tend to have greater degrees of independence and are normally under the auspices of "Institutions of Higher Learning". The national program of primary and secondary education tends to rest upon curriculum coordination but allows for community influence. It has not been the intention of the federal government to sacrifice community needs and the unique value of local customs. Nevertheless the federal government's curriculum coordination function is foundational to the delivery of program. The desire for citizenship training for example, has direct application to the function of the social science programs of the system. The struggle to provide education to all has been a determined one, but one nonetheless with many difficulties. The state distancing itself from the church regarding education and the inadequacies of available funding are but two such major difficulties.

The struggle to provide quality education means many things to Mexicans. Kneller (p. 226) observes that among the many results which have emerged over the years is a determination to reach the masses and establish cultural norms on a basis of education for Mexican citizenship. Additionally, the coordination and standardization of school procedures, aims and accomplishments have received a concerted effort. Certainly, the function of geographic education is central to many of Mexico's educational objectives. Article III of the Mexican constitution following vigorous debate was amended in 1945 to read:

"The education imparted by the State shall aim to develop harmoniously all the faculties of the human spirit and at the same time inculcate a love of country and a feeling for international solidarity, of independence, and of justice. It must be free and democratic, alien to all creeds and doctrines" (Chavels p. 1). Geography plays a major role in addressing this important aim.

While primary (Grades 1 - 6) and lower secondary (Grades 7 - 9) schools are described as federal, state, municipal, private or a combination of these according to their source of funding, the SEP is responsible for their academic calendar, curriculum content, textbook distribution, grading scales and graduation requirements (Villa p.7). Private primary and lower secondary schools are required to have SEP authorization to operate and must, among other things, follow the prescribed curriculum.

Textbooks from a prescribed list are issued free by the SEP. The intention is to have one text and a workbook for each child in each major subject (Chevels p.11).

PRIMARY SCHOOLS

The six years of primary school is compulsory and free for all children between the ages of 6 and 14. All schools are required to use the free textbooks which are written as well as distributed by the SEP (Villa p.7). Primary teachers are usually trained in upper secondary level normal schools or at the tertiary level. Training requires three years past lower secondary school (equivalent to upper secondary school) and four more years of teacher training.

By 1979 91.8% of the population between the ages of 6 and 14 were enrolled in or had completed primary school. However, educational opportunities are still greater in urban than in rural areas (Villa p.7). This observation has direct relevance to the findings of this study. In many rural areas primary schools are not complete; that is, they offer fewer than six years of education. Additionally, in remote rural areas, not enough children exist to warrant a school. Efficiency (percentage completing available grades) continues to be a problem in rural areas. LOWER SECONDARY SCHOOLS

In 1979 it was estimated that 81% of primary school graduates enrolled in some type of secondary school program (Villa p.9). Secondary school teachers are trained at tertiary level normal schools or universities. The majority of secondary

teachers first become primary teachers and then with additional training, become secondary school teachers.

Curriculum is prescribed by the SEP for primary and lower secondary schools. Social sciences, including geography and history, are part of the school program from grades 3 - 9. A new secondary program went into effect in 1975 which continues most of the primary school subjects (Spanish, mathematics, natural sciences and social sciences) and adds a foreign language. Biology, physics and chemistry are included in the natural science area and history, geography and civics are included in the social sciences area. Art education, physical education and technological education are grouped under activities. Lower secondary schools normally provide 'general' programs including courses and activities as noted and prepares students for advanced levels of education. Some schools offer specialized technical and artistic courses allowing specialization at advanced levels or preparation for the work force. Where specialization occurs a reduced quantity of time is available for general subjects. Other institutions offer terminal programs of training and cultural enrichment at the lower secondary school level. However, as the courses are not preparation for advanced levels of education they often are classified as terminal middle level or post primary studies.

In common practice, the majority of school districts provide education at the primary and lower secondary school levels only. When students wish to go beyond grade 9, the final grade of lower

secondary school, they must normally attend a specialized school; for example, a normal school for upper secondary school grades located in a large centre or a college or university, with upper secondary school instruction or affiliations, in designated urban locations within the country.

There is little doubt that the Ministry of Education desires an educational system equally available to the country's citizens. The provision of equal availability and opportunity is a prevailing theme running through the literature pertaining to Mexican education. A recent Mexican Ministry of Education report (1984) outlines a number of established objectives having applicability to this study. A major concern of the report is the importance of extending the opportunities of education to every member of the population. (1984 p.12) The demographic explosion has had direct repercussions upon the fulfillment of educational needs since the population has increased from 14 to 78 million inhabitants in a little more than six decades. This has resulted in continuous increases in demand for educational services. Other emphasis points having applicability to this study include:

1. The importance of improving the country 's cultural climate (p. 17). Certainly, the study of Mexican geography and history are fundamental to this need.
2. The desire to upgrade the co-ordination of personnel norms, organization, information and procedures allowing for the best possible use of the educational

sector's human resources (p. 25). Class size, and curricular time emphases are critical indicators of this objective.

3. The continuation of the decentralization process of rendering educational services is seen as an important instrument for the elimination of inequalities among regions and among individuals (p. 31).

In addition to receiving rapid population increases from within the state some jurisdictions like Baja California have experienced huge immigration. Since 1900 Baja California, and in particular its urban settings like Tijuana and Ensenada, have experienced rapid population growth. Baja California's population in 1900 was a mere 7,583 and by 1980 it had grown to 1,177,886 (Butler p.5). From 1970 to 1980 Baja California's population increased by 35.3 percent. Of that increase of 307,465 people 186,548 of them were as a result of immigration (Butler p.5). In that same year census figures indicate that 85.2 percent of Baja California was classified as urban; second only to the Federal District of Mexico in this regard.

How typical of Mexico's school system are the schools of urbanized Ensenada? Certainly this question is much broader than the scope of this study. A few comments may be useful. As noted, this study concerns the urban schools of the district and excludes the rural setting. Accordingly, the availability of equal opportunities in education are undoubtedly enhanced in urban communities. Certainly, significant differences exist, in the provision of education from state to state. Proximity to the

United States is but one influencing factor affecting the cultural and economic components of education. Of the states bordering the United States, Mexico's state of Baja California demonstrates favourable indicators in educational achievement. Pick's study concerning the six Mexican border states (1988) selected literacy and primary education as two of its socioeconomic variables of geographic distribution and variation. Literacy was considered to be the ratio of literate population, 15 years and older to population 15 years and older and 'Primary Education' concerned the ratio of persons 10 years and older who fully completed their primary level education up to the sixth grade to the total population aged 10 years and older (p.65). His study found Primary Education to be highly correlated to Literacy. For primary education, the regional mean was 36.20 percent with a standard deviation of 12.50 percent and state values ranged from a low of 6.47 percent to a high of 66.21 percent. State means in ascending order are:

38.31 percent in Chihuahua;

31.40 percent in Tamaulipas;

38.66 percent in Sonora;

40.00 percent in Coahuila;

40.72 percent in Nuevo Leon;

50.23 percent in Baja California (p. 7).

Pick's study suggests that Baja California tends to be somewhat more successful in reaching educational goals than its borderland state neighbours.

The Mexican census of 1980 assists us by providing a picture of Ensenada's school achievement compared with other jurisdictions within Baja California. The population of Ensenada district in 1980 is listed as 175,425 representing approximately 15 percent of the state population (p. 6). Census figures indicate that in Baja California 45,755 of a total of 297,486 age 6-14 year old children did not have the ability to read and write (p. 10). This represents approximately 15.4 percent of the group while in the Ensenada district 5,770 of a total of 43,433 age 6-14 year old children (13.3 percent) are classified in this way. The relevant indication is that Ensenada's school children tend to be above state averages in literacy. Similarly, as noted earlier, Baja California's literacy and primary school successes are above borderland state averages. The implication, from all of this, is that Ensenada's schools tend to achieve comparatively favourable educational success when compared to other jurisdictions of this significant part of Mexico.

Griffin and Ford's model of Latin American city structure (Appendix 5) provides a very useful socioeconomic stratification upon which to view the educational system of urbanized Ensenada. When empirically adapted to Ensenada it allows a socioeconomic framework of zones upon which to comparatively test the stated null hypothesis (Map Overlay 1). As expected, with a seacoast city, the model flattens significantly. As noted on the map overlay, the central business district is located in the central eastern part of the city. The associated spine runs in a south-

easterly direction in keeping with the main connecting traffic flow artery through the city. From here concentric rings emanate outwardly and mainly to the east and south.

The empirical application of the model to Ensenada has been accomplished by field observation notations while visiting the schools. A few comments will be made in respect to these observations and the development of Map Overlay 1. The Central Business District is relatively easy to locate in Ensenada. The Map's "points of interest" listing confirms on site observations regarding the CBD's location. Points of interest such as, head offices of police, transit chamber of commerce, telephone services, port facilities, fire services, the naval military and the civic centre are found in the CBD zone. The spine sector of the CBD contains many similar service outlets; for example, telegraph services, social service offices, municipality offices, most of the best hotels and restaurants, health services, tourism offices and large commercial centres. A large tree lined boulevard is central to the spine sector. The best housing tends to be found in proximity to the CBD and the spine sector and is largely situated in a zone running east and south as noted on map overlay 1. Accordingly, as noted from observation and from model characteristics the highest socioeconomic living standards of the city exist here. This area is Ensenada's zone of "elite residential" and "zone of maturity". Housing nearest to the CBD tends to be somewhat higher in standard than in areas farther along the spine. However, the boundaries are indefinite here and

at times the two zones are treated together for this study's data analysis. The zone of 'In Situ' accretion represents a major portion of Ensenada and is found in the central eastern part of the city as noted on Map Overlay 1. This is a zone of transition to the zone of maturity. Housing calibre varies considerably here and partly completed building projects are everywhere. Services are being partially provided in this zone. The zone of "peripheral settlement" is the most impoverished of the city and tends to ring the exterior. Make-shift housing and rutted streets are the norm. Few substantial services exist.

METHOD

This study was undertaken under the supervision of Dr. Barbara Fredrich of San Diego State University's Geography Department. The proposal was to conduct a study of the provision of geographic education in the urbanized portion of the district of Ensenada. Ensenada was selected for the following reasons:

1. Its size of 200,000 people would provide for enough schools to make a spatial study meaningful.
2. It would allow an analysis of the complete urban system of education rather than a section or slice of a large city.
3. The collection of data over the entire community would allow for a better application of geographic urban models.

Three questionnaires were developed, In Spanish, to be completed by forty primary and lower secondary school staffs.

One form was designed as a written questionnaire for school principals and included questions concerning school size, learning materials available to students and teachers and selection details concerning teachers to be involved in the study (Appendix 1). A second form was designed as a written questionnaire for selected teachers and included questions concerning class enrollments, and geographic education time allotments, topics taught, map and globe studies, student research and problem solving. Information was also sought on these forms regarding student trips undertaken and text materials available in respect to this subject (Appendix 2). A third questionnaire was developed to be used orally. Part "A" concerned information sought from principals regarding community socioeconomic status, out of area students and geographic problem solving in schools. Part "B" concerned information needed from the selected teachers concernIng respective teacher training, group worK methodology utilization and the importance of geography to students (Appendix 3).

Mexican approval was obtained for the study at the state education offices in Mexicali, the capital of Baja California and at the Ensenada district SEP office In Ensenada, Baja California (Appendix 4). Included with the approval was the generous provision of a teacher interpreter and an Ensenada educational administrator to accompany the researcher on school visits. Also, at the noted offices arrangements were made regarding school selection and notifications and appointments needed for

this study. Forty schools were selected from across the study area representing the five school funding sources indicated on the map. Schools were selected by SEP supervisory officials of the Ensenada office, to represent all major geographic areas of urbanized Ensenada. The map-school locations and accompanying school directory (Appendix 6) indicate good spatial distribution in inner city, central and outlying areas of the city. School selection, however, was not done randomly which is an acknowledged weakness of the study.

A) Subjects

The surveys involved the principals of each school and selected teachers. The number of teachers was dependent upon the school size. In each school approximately one teacher per 100 enrolled students was selected. School principals selected teachers according to the researcher's grade designations. Teachers were surveyed from grades 3-6 in primary schools and from grades 7-9 in lower secondary schools. The school district of Ensenada, like the majority of Mexican school districts, provides secondary school education at the lower grades only - grades 7, 8 and 9 as noted in the background section of this report. The noted grades (3-9) are those having specific geographic education designations on curricular courses of study. At the primary school level the subject designation is 'social science', which includes geography along with history and civics. At the secondary school level the specific subject of geography is taught. In each respective level of education, approximately

the same number of teachers were surveyed per grade.

In total, of the 40 schools, 39 school principals were surveyed and interviewed. One was absent but some information was gained from the vice principal. One hundred and thirty-eight teachers were surveyed and interviewed. Principals and teachers involved in the study were generally enthusiastic, cooperative and supportive. They appeared to be accomplishing educational endeavours with enthusiasm. They often worked with limited material resources and are commended for their according level of enterprise. Students too appeared to be generally committed to educational achievement. The common occurrences of clean school uniforms and wide smiles are positive attributes of the system and its communities. All primary and lower secondary schools of Ensenada were on two shifts of education. Each school had a morning principal, staff and student body and an afternoon principal, staff and student body. The hours of instruction were approximately 8:00 a.m. to 12:30 pm for the first shift and 1:00 pm. to 5:30 p.m. for the second.

B) Procedure

Data collection procedures involved a quarter day visit to each school in the months of October and November, 1987. Three primary schools and one secondary school were visited each data collection day.

Typically the researcher, administrator and interpreter would meet with the principal first. Following introductions and general discussion the principal completed his/her questionnaire

(Appendix 2) and then responded to the applicable oral questions from Appendix 3. Following this, the designated group of teachers would meet with the research team in a meeting room. Typically, the staff room was used for this purpose. Following introductions each teacher would complete her/his written questionnaire (Appendix 1) and then orally respond Individually to applicable questions from Appendix 3. Following this, the researcher often responded to questions concerning Canada and Canadian education and the administrator to local system questions. A good rapport was established by the system educational administrator and the Interpreter with all involved personnel. However, the possibility of an administrator's presence influencing data during collection, particularly involving oral questions, cannot be discounted. Sessions often concluded with coffee and snacks and always with group pictures of project participants. An instant group photo was left at each school as a parting memento and interest item concerning the project.

Data was transferred, by hand, to summary sheets involving each teacher and school. The project's code-book divided school level data from teacher data to assist with separate analyses. Computer analysis was conducted to obtain cross tabulation tables of each variable with socioeconomic zones. Variables included the results of each survey question plus other obtained indicators; for example, funding source. Column percentages of each variable by socioeconomic zone were calculated and chi

square tests were done to determine trends of statistical significance. Socioeconomic map zoning was accomplished on Map Overlay 1 as outlined in the background section of this report. Map Overlays 2-5 were developed from the school level data to graphically demonstrate selected variable results.

RESULTS AND DISCUSSION

This section describes the summary results, with discussion, of each survey question in relation to the socioeconomic zoning as indicated on Map Overlay 1. The null hypothesis is refuted by some findings but supported by others. In general terms the null hypothesis is refuted by variables directly relying upon the annual distribution of monetary funds. Variables of a curricular nature, having mostly to do with content covered and teacher methodologies employed, show results generally supporting the null hypothesis.

SCHOOL ADMINISTRATOR - WRITTEN SURVEY RESPONSES

Appendix 1 is the written survey completed by school principals. As the sample size of 40 is small, at the school levels for inferential statistics the data will be analyzed on an incidence score or incidence percentage basis. Chi square tests were performed on the available raw data to determine any trends of a statistical significance nature. These scores for school level data were inconclusive and were utilized only in a suggestive capacity, regarding the meaning of the data. Chi square tests and scores to determine statistical significance have been more useful regarding the classroom level data, which

have an n = 138, and accordingly, where appropriate, are reported.

Survey questions 3 a), 3 b) and 4 are of specific interest in refuting the null hypothesis. Response percentages are tabulated for each socioeconomic zone in table 1. The figures represent the percentage of respective classrooms, students or libraries possessing the noted resources. Encyclopedia seem to be more common in zones 1 and 2 classrooms than in zones 3 and 4. Similarly classroom globes and large atlases are found more commonly in zones 1 and 2 schools. Student assigned atlases are characteristically found more often in zones 1 and 2 schools than in the schools of the other two zones. Refer to Map Overlay 2 for a graphic presentation of classroom averages by school concerning the possession of these materials. Zones 1 and 2 demonstrate the majority of higher teacher materials averages while Zone 3, in particular, characterizes low averages.

This characteristic of zone preference was not found regarding assigned texts. More discussion regarding textbook availability will be found under the 'Teacher - Written Survey Responses' heading in this section of the report. Libraries in Ensenada schools showed similar zone preferences to those concerning teacher resources. The availability of encyclopedia, wall maps, atlases, large atlases, globes, photos and pictures represent larger percentages in zones 1 and 2 than in the other zones. This zone preference characteristic did not hold true for geographic charts.

These results seem to indicate that the annual operational funding structure of Ensenada's schools favor higher socioeconomic communities. Materials such as those described are generally of a consumable nature. From this perspective Ensenada's socioeconomic stratification tends to reflect on the availability of student geographical learning resources.

SCHOOL ADMINISTRATOR SURVEY re: LEARNING MATERIALS (n=39> TABLE 1

	ZONE 1	ZONE 2	ZONE 3	ZONE 4
QUESTION 3 a)	Teacher Resources, Possession Percentages			
All Maps	90%	100%	83%	94%
Encyclopedia	70	60	38	56
Globe	70	80	50	63
Large Atlas	50	40	13	31
Other	40	20	0	25
QUESTION 3 b)	Student Assigned Resources, percentages			
Texts	100%	100%	50%	100%
Atlas	40	20	0	25
Other	40	40	50	44

QUESTION 3 c) Library Resources, percentages

Text	100%	100%	88%	100%
Encyclopedia	70	100	50	63
Wall Maps	100	100	88	94
Atlases	80	80	25	38
Large Atlases	20	0	0	13
Globes	70	80	63	50
Charts	60	40	75	25
Photos	50	41	13	6
Pictures	20	0	0	13
Other	30	40	0	19

Other survey results tend to support the null hypothesis. Question 1 (Appendix 1) data concerning school size exhibits little zone preference. Zone 1 has the only school with 99 students or less. Half of its schools (5 out of 10) have 300 students or more. Zone 2 exhibits 4 out of 6 schools (66%) with 380 students or more while zone 3 has 3 out of 16 (19%) fitting this category. In zone 4 half (8 out of 16) of its schools have 300 or more students. It is commonly assumed, in education, that larger schools provide greater facility and human resource opportunities for student education. It seems evident that facility funding, at least in respect to size, does not have a zoning preference in Ensenada.

SCHOOL ADMINISTRATOR - ORAL SURVEY RESPONSES

Appendix 3 indicates the specific oral questions provided to principals.

Question a) concerns the administrator's view of the socioeconomic status of the school's student families. Table 2 outlines the response data which tend to reinforce the zoning criteria of Map Overlay 1. Twenty percent of zone 1 principals see their student families as being wealthy while none of zone 2 - 4 principals see their school families fitting this description. Seventy percent of zone 1 principals see their families as being average in socioeconomic status while in the other zones fifty percent of principals respectively, see their families this way. Ten percent of zone 1 principals see their students as being from poor socioeconomic homes while fifty percent of the principals in each of the other zones felt this way.

TABLE 2

PRINCIPAL'S ASSESSMENT OF SOCIOECONOMIC STATUS OF SCHOOL COMMUNITY

STATUS	ZONE 1	ZONE 2	ZONE 3	ZONE 4
WEALTHY	0%	0%	0%	0%
AVERAGE	70	50	50	50
POOR	10	50	50	50

Table 2 indicates, as noted, that principal assessment of school community socioeconomic status reinforces Map Overlay 1's zoning as adopted from the Griffin - Ford Latin American city structure model.

Oral Question b) concerning the percentage of respective district children attending the local school showed no significant relationship to Map overlay 1's zones. Respondent interpretation of this question was varied and consequently was not coincident with its purpose. One of the difficulties experienced was that of getting a good consensus on what is meant by a school district. Accordingly, it has been omitted from the study.

Oral Question c) concerned the principal's perception of teacher utilization of geographic problem solving in the curriculum. The results show no significant preferences for Map overlay 1's zones. Principals and teachers expressed the opinion that they felt problem solving in geography was a worthwhile component of the program. It is concluded, from the data, that the utilization of this worthwhile curricular methodology is not determined along socioeconomic lines.

TEACHER - WRITTEN SURVEY RESPONSES

Appendix 2 is the written survey completed by teachers. As noted, a teacher 'n' of 138 allows for more inferential statistics reliability than with the school administrator sample.

The source of school funding shows zone preference in respect to Map Overlay 1. The map Key identifies schools

according to their level and to their dominant source of funding. The five specified categories are:

1. Primary Level - Federally Funded
2. Primary Level - State Funded
3. Secondary General Level - Federally Funded
4. Secondary General Level - State Funded
5. Secondary Technical Program - Federally Funded

As the incidence of schools and teachers, with specified funding, within the zones is somewhat dependent upon their non-random selection for this study the zone preference of funding should not be given undue interpretive importance. However, it does provide insight into governmental funding involvement in relation to the socioeconomic structure of communities and it does have implications for the results of this study; particularly, to those having funding inference.

Table 3 reveals some pertinent findings. For purposes of eliminating low incidence cells funding categories 4 and 5 have been eliminated. Also zone 1 schools have been tabulated with zone 2 for this table. Zones 1 and 2 contain 54.7 percent of the sample's primary level federally funded teachers and only 10.8 percent of primary level state funded teachers. Zone I and 2 also contain 75.0 percent of the sample's secondary general level federally funded teachers. Zone 3 contains only 15.6 percent of the sample's primary federally funded teachers and 37.8 percent of the primary state funded ones and no federally funded secondary school general level teachers. Zone 4 contains 29.7

percent of the sample's federally funded primary teachers; 51.5 percent of state funded primary teachers and a mere 11.6 percent of federally funded secondary general level teachers.

TEACHER SAMPLE - ACCORDING TO SOURCE OF FUNDING TABLE 3

Source of Funcing	Zones 1 & 2	Zone 3	Zone 4
Primary Federal	35 (54.7%)	10 (15.6%)	19 (29.7%)
Primary State	4 (10.8%)	14 (37.8%)	19 (51.6%)
Secondary <Gen.> Fed.	15 (75.0%)	0	5 (25.0%)

chi-square 29.496 d.f. = 4 p<.005

Sources of funding varied significantly from zone to zone as noted above and as shown by table 3. Teacher data was used for this analysis rather than school level data as the numbers of teachers sampled more accurately reflects the quantity of funding by zone. There seems to be a decided preference for federal level funding over 7 state level funding in zones 1 and 2 over zones 3 and 4. This preference has implications regarding the availability of consumable geographic materials as noted under the school level data analysis but it also has implications for other funding matters; for example, the class size findings and discussion that follow.

Class size findings by socioeconomic zone do not follow the trends established for consumable geographic materials. In order to eliminate primary - secondary school data distortions caused by differing class sizes in the two panels cross tabulations were made for the two levels separately.

Because of the small data sample (n=36) at the secondary school level the chi square score was used only as a reference. A direction of significance is suggested by this score in the unexpected direction of smaller classes existing in zones 3 and 4 than in zones 1 and 2. At the primary level a statistical significance was found with a chi square score of 11.035 with 4 degrees of freedom ($p<.05$). It too exhibited the unexpected pattern opposite of expectations. Zone 3 and 4 schools are providing smaller classes (student teacher ratios) than those of zones 1 and 2.

The implication seems to be that funding preferences do not favor higher socioeconomic zones in Ensenada. If one assumes that smaller classes benefit educational opportunity then Mexico's funding structure for staffing is giving lower socioeconomic zones equal or better than equal opportunity In Ensenada.

The number of geographic walking excursions taken by classes provides an interesting study tending to refute the null hypothesis. This study results from teacher question 7 a) on the teacher questionnaire - Appendix 2. Table 4 indicates the cross tabulated results by socioeconomic zone of walking trips.

WALKING TRIPS BY SOCIOECONOMIC ZONE TABLE 4

Zone	Number of Trips				
	0	1	2	3	4
1	5	7	14	4	1
2	4	8	11	3	1
3	13	7	1	3	3
4	17	15	15	3	2

Chi square 22.833 - with 12 degrees of freedom $p<.05$ Zone 1 demonstrates the greatest number of geographic education walking trips with 19 classes (61%) planning 2 or more trips for the year. Zone 2 has 14 classes (54%) planning 2 or more trips per year while zone 3 has 7 classes (26%) and zone 4 has 20 classes <38%> doing so. Also, zones 1 and 2 combined have just 9 classes planning no trips while zones 3 and 4 have 30.

Map Overlay 5 provides a graphic presentation of annual class walking excursion averages by school. Like table 4 the overlay shows zones 1 and 2 generally demonstrating the highest number of walking trips while zones 3 and 4 generally exhibit the lowest.

The findings suggest that higher socioeconomic zone teachers are more energetic about planning walKing excursions or that the respective communities have higher expectations in this regard. It could also suggest that more sites of special interest are located within walking distance of higher socioeconomic zone schools.

Teacher survey question 7 b) provided similar data results concerning bus (or non - walking) geographic class excursions. Zone 1 has 11 classes (42%) planning 2 or more bus excursions while zone 2 has 6 classes (27%) making such plans. Zone 3 indicates just 2 classes (8%) planning 2 or more bus trips while zone 4 exhibits 9 classes (18%) doing so. Similarily zones 1 and 2 have just 16 classes (35%) planning no bus trips while zones 3 and 4 have 44 classes (60%) planning no bus trips.

These results suggest that socioeconomic status does have an influence on the number of bus trips. It undoubtedly is influenced by the 'ability to contribute to trip funds' of respective zone families when trips are planned.

Teacher survey question 2 concerns the percentage of class time allocated to the study of geography. Chi square tests were performed to determine any statistically significant patterns regarding the use of classroom time by zone; none were found.

Similarly, teacher survey questions 3 a), 3 b), 3 c) and 3 d) concerning 'geographic study area' content undertaken in class by teachers of the respective zones revealed no significant patterns. Chi square scores revealed little discernible preferences for Map 1 overlay zones. Chi square tests were also performed on the data with primary and secondary school teachers treated separately. The findings were unaltered.

It should be pointed out that on these particular survey questions (3a through to 3d) that preferences for certain geographic curricular content areas, for student study, does not

indicate preferential education. These questions merely reflect the degree of consistency from zone to zone. The noted results suggest that SEP supervision and curriculum guides provide for equal opportunity through consistent student exposure to similar curricular geographic content. From this perspective student exposure to the prescribed study areas seems to be having the effect of supporting the null hypothesis.

Teacher survey questions 4, and 6 concerning classroom methodology also produced data supporting the null hypothesis. It is assumed, in the is study, that identified teacher methodologies are positive and constructive components of geographic school programs. Certainly, in discussion with school personnel and system officials, the inclusion of map and globe skills, student research skills and geographic problem solving were considered to be very desirable program attributes. Chi square tests revealed little support for zonal preference. By performing tests on elementary data only the results were little changed.

A visual analysis of the raw data percentages for the noted questions provides additional support for the findings. Teacher survey question 4 deals with the amount of classroom time allocated to, or involving, map and globe skills. Teachers involving 30 percent of their program time or more with map and globe skills tabulated as follows:

Zone 1 - 32 percent

Zone 2 - 64 percent

Zone 3 - 50 percent

Zone 4 - 47 percent

Map Overlay 3 presents map and globe sKill time allocation averages by school. Little zonal preference is detectable from this overlay.

Teacher survey question 5 deals with the amount of classroom time spent on, or involving, student geographic research. Teachers involving 30 percent of their program time or more with classroom or library research tabulated as follows:

Zone 1 - 39 percent

Zone 2 - 65 percent

Zone 3 - 57 percent

Zone 4 - 55 percent

Teacher survey question 6 deals with the amount of classroom time spent on, or involving, student geographic problem solving. Teachers involving 30 percent of their program time or more with geographic problem solving tabulated as follows:

Zone 1 - 16 percent

Zone 2 - 25 percent

Zone 3 - 14 percent

Zone 4 - 23 percent

The results of the noted methodology questions suggest, as with the time allocation ones noted above, that equal opportunity is being experienced across Ensenada's socioeconomic zones. It is suggested, that curriculum development and curricular

guidelines are contributing to this noted support of the null hypothesis. Results, of interest, are found in Table 5 concerning the availability of supplied student textbooks (Teacher survey question 8). Table 5 presents survey response percentages of primary school teachers by Map overlay 1 zones. Little distinction of text availability Is found from zone to zone. Chi square tests were performed to determine any statistical significance. None was found.

Assigned Texts	ZONES 1 & 2	Zone 3	Zone 4	TABLE 5
0	26.3%	33.3%	27.8%	
1	47.8%	50.0%	41.7%	
2	15.8%	12.5%	25.0%	
3	5.7%	4.2%	2.8%	
4 or more	5.7%	0.0%	2.8%	

An understanding of textbook distribution practices in Mexico assists with the Interpretation of Table 5. Unlike the consumable learning resource materials discussed under the 'School Administrator - written Survey Responses' section, basic textbooks and accompanying workbooks are supplied to all schools directly from the federal government. Specified texts by subject and grade are supplied to all schools based on enrollments. Short term supplemental needs, however, are often handled through local booKstores. It is suggested that this noted funding and distribution practice of the federal government is the main reason of explanation of why the null hypothesis is supported regarding textbooks.

The oral questions for teachers of Appendix 3 produced similar results in support of the null hypothesis. Oral question a) concerns the qualification of teachers. Chi square tests were conducted to determine any statistical significance patterns by zone. None were significant. If any tendencies exist in this data it is that teachers in lower socioeconomic zones have slightly more qualified teachers. The implication here is that the funding structures for human resources support the null hypothesis. Results have a relationship to the funding sources of schools in' the various zones. It tends to suggest that table 3 results, concerning funding preference by zone, do not materialize in discriminatory' practice. The qualifications of staff seem to not relate to socioeconomic zoning.

Oral question b) concerns the use of small group learning situations In geographic education. Chi square tests indicate that a statistically significant pattern Is evident by zone. (Chi square = 28.3 d.f. 15 $p<.05$) The significance is in the direction of more small group work being accomplished in higher socioeconomic zones. This result tends to be not consistent with the results of the other noted methodology findings. Perhaps higher socioeconomic zone communities are giving a greater priority to small group social development than are the families of lower socioeconomic status. This may be one area where socioeconomic status is having a determining influence on teaching methodology.

Map Overlay 4 presents small group learning time averages by

school in geographic education. As indicated by the data analysis the map overlay shows small group instruction to be occupying more class time in Zones 1 and 2 than in Zones 3 and 4.

Oral question c) produced inconclusive results regarding student interest In geographic study and zone preference. Chi square tests yielded no statistically significant patterns. Student interest is reported to be generally high in all zones. Equal opportunity seems to be evident here. It may also be that questions such as these are more difficult to answer objectively than others, as they related rather directly to one's self concept of teaching success.

In summary, the results of this study, in respect to the stated null hypothesis, are noteworthy. Consumable spending for learning materials seems to give preference to schools in high socioeconomic zones. An Implication Is that a method allowing a more equal distribution of annual funding would be desireable. Additionally, learning opportunities resulting from class excursions and small group learning and socialization should be provided more uniformly from zone to zone. Equal opportunity creation could be attempted, in this regard, by a funding intervention in the first instance and by professional development in the second. The implications of these two recommendations are based, in part, on the assumption that the respective communities would support the advantages of such Interventions.

Regarding curriculum matters generally having to do with content covered and teacher methodologies employed, little preferences with the one noted exception above, is exhibited from zone to zone. The implication here is that success is being achieved. Similarly, teacher qualifications, class size and facility size do not seem to relate to socioeconomic status. Another notable example, as outlined, Is the uniform availability of student textbooKs. These significant findings all lend support to the null hypothesis.

It has not been the intent, of this study, to evaluate teaching success in Ensenada's geographic education programs but rather has been to spatially analyze and assess, by stated curricular Indicators, whether equal opportunity to learn exists. Ensenada's school system is maKing noteworthy progress in this regard.

This study has tended to highlight successes and shortcomings in respect to the stated null hypothesis. Its usefulness may well be one of helpful suggestion and encouragement for continued success.

REFERENCES

Butler, Edgar W., et al. (1987>. Migration to Baja California; 1900 - 1980 (Report No. 26, March). El Paso: University of Texas at El Paso, Center for Inter-American and Border Studies.

Chavels, S. G. (1978). Mexico: A study of the educational system of Mexico... New York: Institute of International Education.

Griffin, E., & Ford, L. (1980). A model of Latin American city structure. Geographical Review, 70 (4).

Kneller, G. F. (1973). The education of the Mexican nation. New York: Octagon BooKs.

Mexican Census. (1983). Estado de Baja California. X censo general de poblacion y vivienda, 1980. 2 (2).

Mexican Ministry of Education. (1984). Report on education in Mexico. 33rd General Conference on Education In Geneva Switzerland.

Pick, J. O., et al. (1980). Geographical distribution and variation in selected socioeconomic variables for municipios In six Mexican border states. Journal of Borderland Studies, 2 (1), 58-92.